

Università di Pisa

Corso di Dottorato in Scienze e Tecniche dell'Ingegneria Civile
Curriculum in Ingegneria Strutturale

AVVISO DI SEMINARIO

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A survey of the fiber-free approach to nonlinear sectional analysis

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ore 15.30

Sala Riunioni del Dipartimento di Ingegneria Civile – Strutture (4° piano)

SUMMARY. Recent efforts aiming at developing robust and reliable Reinforced-Concrete (RC) frame elements have focused, on one side, on more accurate element formulations and, on the other one, on the subdivision of elements into longitudinal fibers in order to properly account for the nonlinear sectional analysis associated with the stress-strain laws typically adopted in seismic engineering. Within this framework an alternative method, the so called fiber-free approach, has been recently developed and successfully applied for integrating the stress field on the element sections in the evaluation of the ultimate limit state of the section subject to axial force and biaxial bending or when an elasto-plastic constitutive law is used for performing the non-linear static and dynamic analysis of RC structures according to the more recent code provisions.

[...]

The presentation intends to provide the state of knowledge in this area and to illustrate the recent advancements concerning the most popular and involved elasto-plastic constitutive models for concrete such as the ones due to Karsan and Jirsa and to Mander, Priestley and Park.

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